Russian Chemical Reviews 2001 vol.70 N1, pages 1-22

Correlation analysis in the chemistry of free radicals

Cherkasov A., Jonsson M., Galkin V., Cherkasov R.
Kazan Federal University, 420008, Kremlevskaya 18, Kazan, Russia

Abstract

Published data now available on the use of correlation analysis in free-radical chemistry are discussed systematically. The scales of 'radical' σ-constants of substituents proposed previously are analysed. It is shown that none of them is applicable as a general scale because almost in all cases, it is impossible to separate correctly the proper radical and polar contributions to the overall effect of substituents. A new approach to the quantitative estimation of the relationship between the structure and reactivity of molecules in free-radical processes called r-2-analysis is proposed. The bibliography includes 238 references.

http://dx.doi.org/10.1070/RC2001v070n01ABEH000574